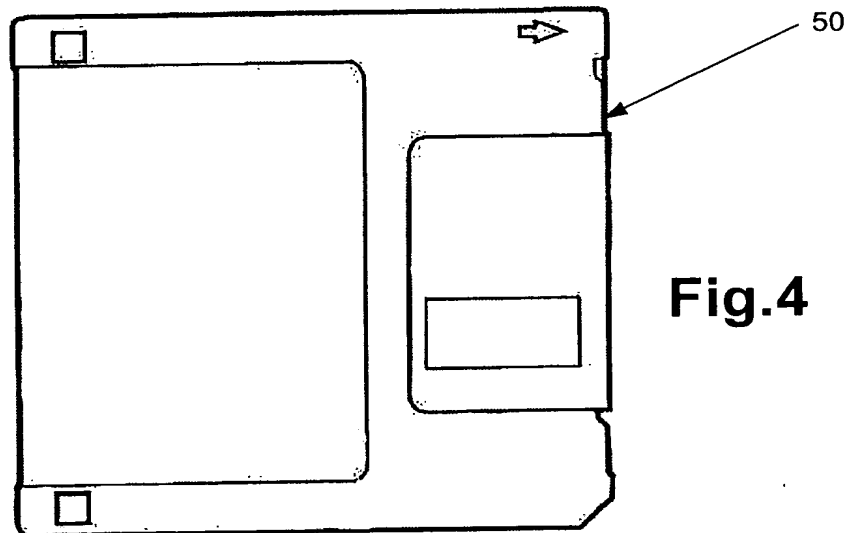


```
40  -- command 2, wait command - give some time for the other thread 42
    -- to go pending on this thread
    2 => (operation => cWAIT_AFTER_PREV_CPEI_CMD_DONE, --"001011"
        order_id => "XX",
        sem_num => "XX",
        44  sem_val => "11110000111100001111000011110000",
            dir_flag => '1',
            MSB_4addressbits => "1111",
            append => false,      -- valid only with enable command
            queue_number => "01"), -- valid only with enable command

41  -- command 3, wait command
    3 => (operation => "000101",
        order_id => "XX",
        sem_num => "XX",
        45  sem_val => "11110000111100001111000011110000",
            dir_flag => '1',
            MSB_4addressbits => "1111",
            append => false,      -- valid only with enable command
            queue_number => "01"), -- valid only with enable command
```

**Fig.3**



**Fig.4**



**Fig.2**

```

library ieee;
  use ieee.std_logic_1164.all;
library sem_man_lib;
  use sem_man_lib.sem_rec_pkg.all;
package bucket_8a_p is
  constant cbucket_8a : bucket_T :=
    (size_of_bucket => 5,
     commands_array =>
       -- command 0, enable queue 0 and 1
       (0 => (operation => "000011", -- enable thread command
              order_id => "11",
              sem_num => "XX",
              sem_val => (others => 'X'),
              dir_flag => 'X',
              MSB_4addressbits => (others => 'X'),
              append => true, -- valid only with enable command
              queue_number => "11"), -- valid only with enable command
              -- should have the same value as order_id
              -- command 1, ordered lock, queue 0, sem 0, direct mode
              1 => (operation => "000000",
                    order_id => "01",
                    sem_num => "00",
                    sem_val => "00001111000011110000111100001111",
                    dir_flag => '1',
                    MSB_4addressbits => "0001",
                    append => false, -- valid only with enable command
                    queue_number => "01"), -- valid only with enable command
              -- command 2, reservation release, queue 1, direct
              2 => (operation => "000010",
                    order_id => "10",
                    sem_num => "01", -- don't care for reservation release
                    sem_val => "11110000111100001111000011110000",
                    dir_flag => '1',
                    MSB_4addressbits => "1111",
                    append => false, -- valid only with enable command
                    queue_number => "01"), -- valid only with enable command
              -- command 3, unlock - sem 0, direct
              3 => (operation => "000001",
                    order_id => "XX",
                    sem_num => "01",
                    sem_val => (others => 'X'),
                    dir_flag => '1',
                    MSB_4addressbits => "0001",
                    append => false, -- valid only with enable command
                    queue_number => "01"), -- valid only with enable command
              -- command 4, enqueue
              4 => (operation => "000100",
                    order_id => "XX",
                    sem_num => "XX",
                    sem_val => (others => 'X'),
                    dir_flag => 'X',
                    MSB_4addressbits => "0001",
                    append => false, -- valid only with enable command
                    queue_number => "01"), -- valid only with enable command
              others => cCommand_others_x
            )
    );
end bucket_8a_p;

```

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